

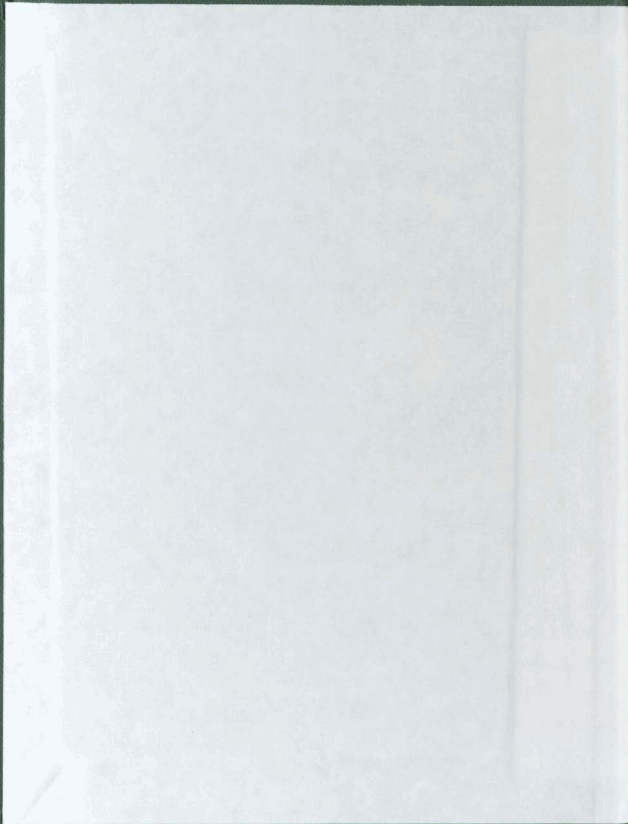
AN EVALUATION OF ENGLISH LANGUAGE ARTS
SOFTWARE: A GRADUATE INTERNSHIP REPORT
DONE THROUGH THE LEARNING RESOURCE AND
TECHNOLOGY DIVISION OF THE NOVA SCOTIA
DEPARTMENT OF EDUCATION AND CULTURE

CENTRE FOR NEWFOUNDLAND STUDIES

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An Evaluation of English Language Arts Software: A Graduate Internship Report done
through the Learning Resource and Technology Division of the
Nova Scotia Department of Education and Culture

by
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A report submitted to the School of Graduate Studies in partial fulfillment of the
requirements for the degree of Master of Education

Faculty of Education
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Abstract

This internship report details the experience the researcher had at the Nova Scotia Department of Education and Culture evaluating English language arts (ELA) and other software. Criteria for the evaluation of software together with other relevant internship experiences with technology are detailed. The experiences of the writer as a teacher and technology administrator at a technologically innovative school in Alberta are brought to bear and used to draw out the educational gains of the internship.

For my mother and father, Marion and Gerald Stordy, for instilling within me a passionate commitment for lifelong learning, and for my students at Banded Peak School, whose exuberance for life makes my heart sing.

Acknowledgements

I would like to thank my M.Ed. supervisor, Barrie R.C. Barrell, for his patience and helpful remarks regarding this report. I would also like to thank Glane Gorveatt, Michael Jeffery, and the staff from the Learning Resource and Technology division of the Nova Scotia Department of Education and Culture for their acceptance of me at the LRT centre. Their willingness to answer my never-ending questions is greatly appreciated. I also wish to thank my husband, Andy Cameron, for his timely encouragement and support during the internship and the writing of this report.

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Rationale

The Atlantic Provinces Education Foundation (APEF), the Western Canadian Protocol (WCP) and Alberta Learning have all made technological competence a required graduation learning outcome (Barrell, 2000). The integration of technology into classroom practice is now a mandatory component of the curriculum (see for example *Foundation for the Atlantic Canada English Language Arts Curriculum*, 1996, p.9). In Atlantic Canada, most teachers have had to scramble to learn how to use technology in meaningful ways and look for software that helps them achieve the aims and objectives of the curriculum.

Software companies have produced, and continue to produce, a plethora of educational material and programs for use by teachers and the general public. This M.Ed. Internship report focuses on how English language arts (ELA) educational software is to be assessed for its pedagogical appropriateness and applicability. The researcher spent ten weeks with the Nova Scotia Department of Education and Culture as an information technology consultant intern. This report will articulate the work of the intern at the Learning Resource and Technology program division. Specifically, the report sets out the software evaluation criteria, explicates reasons for acceptance and rejection, and gives examples of poor, average and exceptional ELA software programs. Finally, the researcher uses her experiences as a classroom teacher and technology administrator at Banded Peak School, a leading Alberta school for technology integration, to make recommendations regarding the infusion of technology into various ELA curricula. These recommendations should help various Canadian schools and

constituencies as they start to face the increasing costs and challenges brought about by information and communications technologies (ICT) integration.

Structure of Learning Resources and Technology Division

Learning Resources and Technology (LRT) is a division of the program branch of the Nova Scotia Department of Education and Culture. The division is responsible for providing the learning resources and services in a more economical and efficient way than maintaining them at the regional or local level. The director of the branch is Michael Jeffery. He oversees a handful of consultants who are all former teachers. LRT provides support for classroom resources in video, computer, multimedia, and distance education formats. The staff at LRT is involved in various facets of learning resources and technology. There is a focus on media production, technology recycling, distance education (Network Nova Scotia), connecting resources with curricular areas, and computer software evaluation. Glane Gorveatt is an information technology consultant at LRT; he coordinates the evaluation of microcomputer software and multimedia products. Thus he was the logical choice of field supervisor for the intern, and he coordinated many of the internship activities.

Located on Kempt Road in Halifax, Nova Scotia, the LRT has within its facilities a technology demonstration centre. The centre is open weekdays from 8:30 a.m. – 4:30 p.m. and is where the intern spent the majority of her time. The demonstration centre oversees more than 1300 educational software titles at various stages of evaluation. New programs are being constantly added to its collection. The LRT 'demo centre' contains information technology that is considered appropriate for use in Nova Scotia schools, and reflects the technology that can be found in the schools of the province. The province of Nova Scotia has not dictated a single technological platform for use in schools, so the demonstration centre contains Personal Computers (PC's) and MacIntosh computers.

The centre also contains new computer systems under consideration for use in the schools of Nova Scotia. Teachers and groups of teachers are encouraged to visit the demonstration centre, use the software, and make comments regarding the usefulness and applicability of various software to both subject and grade. Formal professional development programs are often arranged in conjunction with school boards at the centre.

Internship

Listed below are numerous goals and activities established by the researcher in consultation with her supervisor prior to undertaking the internship. Below each of the activities and goals is a brief explanation and/or reflection on how the intern met the goals and valued the experience.

- ❖ *To demonstrate competence as an information technology consultant specializing in the evaluation of educational software.*

The intern kept in close contact with Glane Gorveatt, the information consultant at LRT. Mr. Gorveatt shared his office space with the researcher and one other consultant and made himself constantly available for questions and discussions. He communicated regularly with the intern each morning and afternoon and passed on additional information through email and voice mail. Mr. Gorveatt allowed the researcher to 'shadow' him whenever he felt there would be a new or unique learning experience. This happened most frequently at the beginning of the internship. Mr. Gorveatt allowed the intern to sit in on meetings and conversations with other educators and software representatives. He allowed her to join list-serves specifically set up for Nova Scotia teachers and consultants.

- ❖ *To improve software evaluation skills by observing the team members of LRT and to investigate the suitability of the evaluation process.*

The intern had the opportunity to evaluate over a hundred software titles during the ten weeks at LRT (see Appendix A). The information consultant modeled his method of evaluation and provided reading material, Web sites, and access to all software evaluation material available at LRT.

- ❖ *To be a liaison with software companies and discuss the philosophies behind the creation of their products, and to investigate exactly who is creating the educational software that is being evaluated.*

Munin Multimedia Solutions Ltd. is a Nova Scotia software company based in Halifax. Among the commercial products created by MMS are Shadows of Citadel Hill, Oak Island Mystery, and Africville. The researcher spent time at the company where she met software developers and graphic designers. The researcher also communicated with other software companies via telephone and email. She talked to company representatives from companies such as Clearvue, Tandex, and Apple. She also spent time with a number of software salespeople who visited the demonstration centre during the period of the internship who created the software [see above].

- ❖ *To apply the current theories of learning to the educational software programs and to see if a match exists between the theories of learning and the educational software programs.*

Having completed coursework that delved deeply into constructivism (Jonassen 1991, 1995; Wilson 1995; Stommen and Lincoln 1992) and instructional design principles (Alessi and Trollip 1991; Richey, 1993; Gagne and Briggs 1988; Grabe and Grabe 1996) of computer based instruction, the researcher applied this knowledge and theory to the software that was being evaluated.

- ❖ *To determine if the English language arts software programs are appropriate for the English language arts curriculum as presented in the Foundation for the Atlantic Canada English Language Arts curriculum document.*

It was imperative that the researcher became familiar with the curricular documents (APEF) prior to any assessment of software. After initial exposure to the documents at the beginning of the internship, the researcher referred back to them throughout her time at LRT.

- ❖ *To determine the connection between the government level of the evaluation system and the classroom level of the evaluation system.*

Only after much reflection did the researcher fully understand the degree of connection between the two levels of the evaluation system. This will be discussed in more detail later in this report.

- ❖ *To match educational software with the key-stage curriculum outcomes as outlined in the Vision for the Integration of Information Technologies within Nova Scotia Public School Programs.*

The researcher took part in a two-day workshop at LRT with teachers from Pictou County, Nova Scotia. The goal of the workshop was to gather illustrative examples for the learning outcomes for information technology for Nova Scotia. As this event occurred near the completion of the internship, the researcher felt competent enough to help the learning resources consultant, Nancy McDonald, match the key-stage curriculum outcomes with educational software programs (see Appendix B).

Other Specific Activities

Because of the nature of LRT, the researcher had the opportunity to participate in activities that far exceeded ELA software applications. These broad-ranging experiences, though not directly related to ELA, allowed her to understand how technology was being positioned within education. The experiences did help the researcher see and understand more about the technical side of software manufacturing, but also the commercial influence at work to market and sell various products. These additional experiences were important for the intern's growth as an ELA software evaluator. They included:

❖ *Assisting with in-services for teachers and student teachers on software use.*

Education students from Mount Saint Vincent's University in Halifax came to the demonstration centre to see examples of educational software. As well, teachers from various school boards came, sometimes as an entire staff, for professional development. Some teachers came on their own accord to see what software was available for their use. The intern's time was spent showing examples of software and discussing the "pro's and con's" of specific software titles as well as helping educators choose appropriate software for their desired audience in a multiplicity of subjects.

❖ *Attending demonstrations and presentations from publishers of educational software.*

Numerous publishers of educational software would visit the LRT to show examples of their products. The intern would often meet with the publishers along with Mr. Gorveatt or Mr. Jeffrey to view the products. Often publishers would leave examples at LRT to be evaluated. Voyageur Interactive Technologies from Sydney, Nova Scotia was typical of a software company that met with the intern.

- ❖ *Attending product demonstrations from companies such as Apple Canada and Tandex on cutting edge software and hardware.*

The researcher attended an Apple presentation demonstrating new products and new technology at the World Trade and Convention Centre in Halifax. (see Appendix C).

- ❖ *Investigating issues of distance learning by participating in discussions with the provincial consultant of distance education and by noting current issues and trends in distance education in Nova Scotia.*

Far Site is the software used by Network Nova Scotia (NNS) for its distance education programs. The researcher became familiar with the software and its use at LRT. For the most part the discussions centred on the use of asynchronous distance platforms to synchronous platforms for supporting distance programs. The researcher also had the opportunity to investigate ACME software that was being used at Acadia University for Web-based courses.

- ❖ *Meeting with technology consultants for roundtable discussions on technology in Nova Scotia schools.*

The intern represented the Nova Scotia Department of Education and Culture at a technology roundtable discussion with various school board technology consultants. The session was held at the Apple Canada office in Halifax. The researcher found the discussion insightful to the concerns of the local school boards with regard to technology implementation in Nova Scotia schools.

- ❖ *Attending workshops offered to the Department of Education and Culture on improved databases and searching systems.*

An example of these workshops was search systems training through Infotrac.

- ❖ *Becoming familiar with two platforms (Apple and PC) and the technology that is being developed in these competing areas.*

The intern spent time using both platforms to evaluate software and became familiar with the intricacies of each platform.

Additional Experiences

Most of the goals outlined at the beginning of the internship were satisfied, and the majority of the activities were accomplished. However, in addition to the anticipated goals and stated activities, the following unanticipated activities were undertaken and experienced during the three month internship:

- ❖ Evaluated a National Film Board of Canada production about Internet safety called *Caught in the Net*.
- ❖ Placed orders for software to be purchased by the LRT.
- ❖ Learned 'Group Wise' software as a communication tool within the Department of Education and Culture.
- ❖ Read material on software and technology in relation to educational applications.
- ❖ Participated in discussions with educators from Iceland.

The staff at LRT met with a large group of headmasters from Iceland to discuss issues of technology and education. Part of the discussion included software evaluation and demonstrations of various programs in use on Nova Scotia schools.

These activities, demonstrations, meetings, discussions, and evaluations helped the researcher gain the practical experience needed to come to a broad philosophical and pedagogical understanding about the value and applicability of commercial software applications. They formed the groundwork for some of the positions taken at her present school in Alberta. They also went far to inform the pedagogical stance she now takes as the technology administrator in her school.

Software Evaluation Criteria

The LRT publishes a database of software evaluations that contains summaries of reviews done by consultants and teachers in Nova Scotia (<http://www.lib.ednet.ns.ca/softdb.html>). The information technology consultant writes a summary based upon the reviews completed. Educators in Nova Scotia may acquire *listed* software from the Nova Scotia Book Bureau using their school credit allocation. A software program becomes listed once it has received five more positive reviews than negative. The intent of the database is to identify worthwhile software to be used in Nova Scotia schools. The database on the LRT Website is searchable and contains all software programs in various stages of evaluation to give educators an idea of a particular program's capabilities. Teachers are encouraged to complete formal written evaluations of software that is available at the LRT demonstration centre. Software and evaluation forms are also mailed out to teachers who wish to evaluate the software at their homes or schools. The evaluation form, (see Appendix D) used by consultants and teachers, is also available on the LRT Website.

The current LRT evaluation form has been slightly modified over the past few years, but the criteria for evaluation remains the same. The two-page document must contain the title of the software, the format, and the publisher. Added to the most recent form is a declaration by evaluators that they are not authors or developers of any resource currently under consideration by the Department of Education and Culture.

Evaluators must be familiar with the Essential Graduation Learnings (EGL) for the Atlantic Provinces and the program of studies for Nova Scotia schools. The appropriate EGL strand that the software satisfies must be chosen, as well as the

applicable key-stage outcomes for the specific curricular area. Evaluators must summarize the content of the software program and explain how they would use the resource with learners. They also have to identify strengths and weaknesses of the software.

There are four choices for all evaluators: highly recommended, recommended, recommended with reservation, and not recommended. Software is *highly recommended* if it meets the following criteria as established by the Nova Scotia Department of Education and Culture:

1. The resource satisfies at least one of the Essential Graduation Learnings.
2. It has an appropriate audience (special needs, visual learner, K-12).
3. It is applicable to a key-stage or grade level outcome as stated in the program of studies.
4. It compliments and/or replaces a current authorized resource.
5. It is the most appropriate medium for the learning experience.
6. It supports creativity, analysis, decision making or problem solving.
7. It contains support materials for teachers and students.
8. There is no bias toward gender or racial groups.
9. The resource is culturally inclusive.
10. The perspective is appropriate for the recommended grade level.
11. The program is easy to install and runs with few glitches.

Software that is *recommended* would satisfy most of the criteria stated above (Barker & King, 1993; Alessi & Trollip, 1991; Heller, 1991; Hannafin & Peck, 1988). Software that would be *recommended with reservation* would be weak in a few areas, but still

basically a good program. For example, a program that meets most criteria but has poor sound quality would *be recommended with reservation*. Software that is *not recommended* would be any program containing any bias (gender, cultural, racial), poor prose, or inaudible sound despite meeting all other criteria. Software that is flawed by failing the evaluation criteria is rejected.

The researcher also went beyond the required evaluation criteria. She used her theoretical knowledge of constructivist learning environments (Jonassen, 1991, 1995, 1996; Wilson, 1995; Stommen & Lincoln, 1992) and instructional design (Hustedde, 1996; Richey, 1993; Alessi, & Trollip, 1991; Gagne, Briggs, & Wager, 1988; Hannafin & Peck, 1988) for computer-based instruction when evaluating the software for LRT. The combination of sound, text, and graphic images was one particular interest of the researcher. There should be no redundancy of information for learning to be extended, but a proper combination of sound, text, and images (Mann, 1995, 1995a, 1995b). More specifically, sound on a screen should give the overall gist of the information being provided. The text should contain the details, and the graphic images should support the information given through sound and text. The researcher also analyzed the appropriate use of sound in the programs. She specifically looked at 'point of view' sound, sound for mood, narrative sound, and temporal sound. According to Mann (1995) temporal sound extends learning by cueing the user to information on another screen.

LRT promotes constructivism. Says Glane Gorveatt on the type of software the LRT seeks for use in Nova Scotia schools, "*We prefer constructivist software allowing students to have rich experiences not otherwise possible*" (<http://lrt.ednet.ns.ca/demo.htm>).

According to Jonassen (1996) constructivist learning environments allow students to have rich experiences that are connected to the real world. The students actively create their own knowledge by combining their new information with their own personal experiences. Software that is constructivist by nature is open-ended, gives partial answers to students through cognitive apprenticeship, and demands that they use creativity, problem solving abilities, and higher order decision making skills. Thus, in addition to the normal criteria, the researcher looked for software programs that appeared constructivist by design. Written evaluations would draw attention to this fact.

Results of Software Evaluation

During the internship, the researcher spent time evaluating software in all curricular areas. She completed over thirty formal evaluations of software programs, but did close to one hundred informal evaluations. There was a wide spectrum in the quality of the programs. Of the thirty formal evaluations, the researcher only recommended six programs and rejected nine outright.

In My Own Voice: Multicultural Poets on Identity, published by Sunburst, and *Writing for Readers* by Pierian Springs are two examples of software that met all the criteria established by LRT. *In My Own Voice* is an interactive collection of contemporary multicultural American poetry that is intended to inspire creative work by the user. The ELA program is rich in many ways; sound, text, and images combine to give the user the sensation that he /she is sitting in a café in Greenwich Village listening to the poets explain how they bring themselves into their writing. The opportunity to hear the poets' voices with the lilt of their particular dialect and the ability of the user to choose appropriate background music makes for a feeling of authenticity. In addition, users can use a word generator to help them overcome writers' block. Despite a lack of Canadian poets, the program is valuable as a resource in an ELA classroom. It is presently only available in MacIntosh format.

Writing for Readers by Pierian Springs is a MacIntosh program that provides video clips of American writers talking about their writing strategies. Users are challenged to broaden their writing skills by getting advice from experts, sharing their writing with others, setting goals for future writing, and thinking critically about areas of writing. By using an idea generating process, users can choose a plot, characters, and

setting. The software is easy to use and contains a helpful user's manual. It also has 'sticky notes' that allow a student or teacher to communicate within a document about the process. *Writing for Readers* is an excellent tool for promoting collaborative writing. The software is open-ended, complements the writing process used in classrooms, and gives a comprehensive view of what is involved in being a writer and in thinking like one. There is structured assistance within the program making it useful to writers with special needs.

Finding products to reject was unfortunately all too easy for the researcher. At the other end of the spectrum are two examples of ELA software not recommended by the intern: *William Shakespeare: The Complete Works* by Andromeda Interactive and *How To Read & Understand Poetry* published by Clearvue. The Shakespearean program contained Shakespeare's complete works on CD-ROM. It was unfortunately mostly text-based with very little interactivity for the user. The program simply gave information. While the information is attractively presented, it is very linear and presents few challenges. With so much available on the World Wide Web about Shakespeare, the researcher found it is difficult to see the value of *William Shakespeare: The Complete Works*. This software might lend itself more to scholars searching out particular lines of plays.

How to Read and Understand Poetry is a program that contains poetry and comments from poets. Information is presented to the user on content, form, and the interpretation of poetry. This program was immediately rejected by the researcher because of its use of sexist language. In order to understand how a program could be created in the late 20th century and contain text that is outright sexist in nature the

researcher contacted Clearvue, a Chicago-based software publishing company. According to the editor who also worked as the educational specialist, the CD-ROM was created because of the popularity of the book by the same name. The CD-ROM's were created in the early 90's and are the exact text found in the book. When the researcher informed the publisher that it would be impossible to recommend the program, the response was that it would be too expensive to change the narration of the CD-ROM, but that the language would be changed when the next edition would be published.

During the evaluation process certain trends began to surface for the researcher. Software published by companies such as Tom Snyder, Pierian Springs, and Broderbund tended to meet more of the evaluation criteria than many of the other publishing companies. The intern also noted that software created for use with the MacIntosh format tended to meet more criteria of the evaluation process than many programs created for use with the PC format. It was felt that these companies seemed to have an ethic and a basic understanding of high quality software with real educational applications. The researcher has no evidence that would support the greater success of MacIntosh platforms.

Banded Peak School: Inspiring a Passionate Commitment to Learning

Banded Peak School is courageously committed to the passionate engagement of the mind, body and spirit through challenging the status quo, advancing educational knowledge and practice, cultivating and celebrating of uniqueness, developing vibrant partnerships, fostering environmental literacy and responsibility and optimizing all resources to enhance and extend teaching and learning.

The vision statement of Banded Peak School

Shortly after completing her internship, the researcher continued her career in education at Banded Peak School (see Appendix E). Located half an hour west of Calgary, Alberta, Banded Peak is in the hamlet of Bragg Creek. The school is situated in a clearing of aspen and pine in a picturesque setting in the foothills to the Canadian Rockies. The philosophy of the school is to move toward a new paradigm of teaching and learning. Teachers are encouraged to push the edge of possibility with their students. Work is to be meaningful and connected to the real world. To achieve this, the school strives to be a student-centred learning environment where students actively construct their own knowledge through project based inquiry. A member of the Network of Innovative Schools, Banded Peak was the first school that the Galileo Educational Network at the University of Calgary decided to work in collaboration with. The school is celebrated for its integration of technology into the school curriculum. The physical structure of the building reflects the philosophy of the school. Computers are located throughout the school in pods in hallways and throughout the classrooms (see Appendix

F). Hence machines are easily accessible to students at all times. The biweekly trip to the computer lab according to a fixed schedule is not the reality for Banded Peak students. Students use the technology when it makes sense in their learning. It is not in the philosophy of the school to lock machines up or to make it difficult for users to gain access to them.

The researcher also functions as the network administrator for the school; Banded Peak visionaries knew that there had to be a strong connection between the structure of the network and the philosophy of the school. Students have access to their work and the Internet from all workstations throughout the building. As well as every user having their own directory, there is a shared directory for collaborative work by both teachers and students. Access on the network is similar to access to the hardware; there is open access to software, property settings, personalized desktops, and operating systems of the 'real world'. The software that is used by students is the same as the software used by teachers, government, and industry. Students and teachers use Microsoft Office in their daily work as well as other utility software. Utility software is software such as word processors, presentation software, spreadsheets, and databases. Jonassen (1996) uses the term *mindtools* to describe utility software. At Banded Peak, students use the software as a means to create and organize their own knowledge and present their work. They organize, analyze, synthesize, problem solve, and program using utility software.

If there were a school that was going to use ELA software in instruction, Banded Peak would be it. After exposure to a wide range of software the researcher finds she uses very few of the commercial programs she evaluated. The technology that is used by her grade 2 class parallels software used in business and by adults. Students compose

their own stories using Microsoft Word or multimedia presentation software such as Microsoft PowerPoint or Astound. The students create hypertext documents linking to the Internet or Intranet. They use digital cameras and associated software to enhance or edit their pictures. The student software presently in use requires that student read, listen, discuss, and represent their knowledge; these are all aspects of ELA. When the students compose using pictures, sound, and written creative text, they are again using ELA related skills.

It is the authenticity of students' actions and investigations that is important at Banded Peak. Presently the researcher's class is studying Mars (<http://www.rockyview.ab.ca/bpeak/classes/grade2/cameron/index.html>). The students decided they needed to investigate the Red Planet in a way similar to NASA investigations; they have formed five teams that are developing robots using Lego Mindstorms robotics kits and will be performing specific tasks as decided upon by the students (see Appendix G). The robots will be searching for life, searching for plants and water, digging underground, collecting soil, and collecting gases. The students have created to scale a section of the terrain of Mars in the centre of their classroom measuring 8 feet by 8 feet. Using programming software the grade two students have added touch sensors, light sensors, temperature sensors, and other attachments to the robots according to their specific functions and requirements. The software is transmitted from the computers to the robots through the use of infrared technology. The children download and test out their instructions and the capabilities of the structures they build. Through an online project called Red Rover Red Rover, a collaborative project with The Planetary Society, NASA, and Lego, the children of Banded Peak will be able to use the Internet to

manipulate robots in classrooms in other parts of the world. Students in France or Germany will have the opportunity to manipulate the robots of Banded Peak. This manipulation of robots through remote means using a computer is the exact model of how NASA and their Jet Propulsion Laboratory scientists manipulate their rovers.

ELA software at Banded Peak is utility software available to any purchaser of a computer. Software is used as a *mindtool* and not as a drill and practice tool such as software like Sticky Bear or Reader Rabbit. The fears of people like Michael Apple (1991) and Larry Cuban (1986) who often see computers as producing students with a mechanistic view of the world or computers used as substitute teachers is ill-founded when computers are used according to the teaching and learning strategies of Banded Peak. According to Marinucci (1999), "Here [Banded Peak] the shared perception is not the commonly pitched belief of the computer as an isolator and minimizer of human interaction. On the contrary, it is the lively, often heated, human interaction around these machines that invigorates the illusion and imbues the magic of possibilities" (p. 17).

Conclusion

Any recommendations involving the integration of technology into school practice must take into account the geopolitical forces that impact the work schools do. The conglomerates that now control most of the communications, information, entertainment, publishing, and media industries have dominion over many of the outlets for the dissemination of their commercial products and endorsements. Schools, if they have the will, can now challenge the claims of these companies and *publish* their own views, concerns, research, and investigations to either cause political action, challenge company claims, or display their own visual, audio, or written texts that offer a counter or different view of the world.

Schools no longer need to operate in isolation. Information now flows into the classrooms of the nation through Internet and local area networks and databases. However, information and knowledge claims can also readily flow out of the classrooms and into the world. For students this means their work can take on an authentic resonance. Schoolwork no longer needs to be private work. Schoolwork can now have political, commercial, or artistic consequences in the world. When and if appropriate it can be put up on the Web and receive responses that are unique; sometimes the responses are even unusual and touching.

Here are just three examples from the researcher's own school where the students' published work using various software applications has had an effect on government, an academic, and industry. Using a variety of applications, students presented to the legislature of Alberta information that influenced the denial of an application for subdivision bordering on Kananaskis Country. Using the Internet, grade two students

displayed their scanned images of their visual representations of the Greek classic, The Odyssey, on the Banded Peak Web site. Two years later, a Greek professor, Paul Lykoudis, used one of the students' images for the cover of his modern Greek translation of the epic after he had extensive email communications with the young students. The book is on display in the school with an acknowledgement to the school and students. The researcher's grade two class communicated with a New Zealand businessperson through email on the proper way to use SMARTBoards. The businessperson planned to introduce the technology to New Zealand for the first time and he was told by a Canadian educator at a technology conference in New Zealand about the students at Banded Peak and their frequent use of SMARTBoards. The students discussed the right things to do when using the interactive white board as well as the things not to do with the learning tool. With the students' permission, the Galileo Educational Network at the University of Calgary forwarded the email on to the CEO of SMART Technologies. Students who have experienced the dissemination of their work in these authentic ways have gained agency in the world after these experiences.

Having presented work at the Canadian Society for the Study of Education (Cameron and Barrell, 2000) in Edmonton Alberta, the researcher noticed firsthand the lack of pedagogical understanding of technology and learning amongst some of those present. A number of elementary ELA professors who are now beginning to include and discuss various software programs in their classes were intrigued by the work of the students of Banded Peak School and the integration of English language arts into their project-based inquiry in often seamless ways.

The researcher's experience at Banded Peak School as a teacher and technology administrator has changed her pedagogical orientation and educational philosophy. During the internship at LRT, the intern was less concerned with deeper pedagogical questions surrounding educational software than she was with understanding what software was available for student use in Nova Scotia schools. In a student-centred classroom where authentic activities and profound investigations are undertaken, there is very little use or need for commercially produced software with specific foci.

The use of technology as a learning tool in classrooms is an area that needs continuous reflection and probing by all involved. Placing computers and software in schools without changing fundamental teaching and learning practices is often fruitless and expensive. Clifford and Friesen (1995), of the Galileo Educational Network state: "We might, as Papert (1993) says, simply try to strap the jet engine of powerful computers to the old, worn-out frame of our horse and buggy school. If we do that, the end result will be unfortunate. All we will do is shake the buggy to bits and scare all the horses" (55).

The experience of the internship at LRT evaluating software for Nova Scotia schools was a valuable experience in many ways. It helped the researcher become more critical and thoughtful about software applications. She developed a deeper understanding of the types of professional development that classroom teachers require and are entitled to in their practice. The policy issues surrounding technology and software use in schools all became apparent.

Around her classroom sits the castle walls from last years' investigation of the Middle Ages. Now within those walls sits an eight by eight reconstruction of the Martian

landscape complete with programmed robots ready to explore and probe. Olympus Mons rises up four feet into the air and from the ceiling the dark night sky shows stars, the moons of Mars, Phobos and Deimos, and Earth an imagination away. The children will not think about the software programs they used or the technology they mastered during their investigations. They will dream of Greek myths, planets yet to be discovered, and even life lived in another dimension. The possible finding of water on Mars in June 2000 has very real meaning for these students and makes them dance with excitement. Their learning environment is the world around us, and technology has allowed their classroom walls to expand to limitless boundaries.

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Appendix A

Example of a communication about software evaluation between the director of LRT and the researcher

From: Michael Jeffrey
To: CAMEROMM
Date: 3/27/98 4:31pm
Subject: The World of the Internet-Reply

An excellent review. Thanks - I agree with you.

I was disappointed in the material.

MGJ

>>> Mary Cameron 03/27/98 03:17pm >>>
Hi. I took a look at this product and here are my thoughts:

Part of me liked this product and part of me didn't.

While others think "why pay for something that is free on the Internet?" I don't necessarily agree. I like the idea of the CD-ROM, because it is the very fear of going on the Internet that teachers must overcome, and I do not think that the people who need this type of instruction would go to the "free" sites in the first place. Using the CD-ROM, teachers can feel secure in the fact that they can't do anything too wrong. So, the concept of the product I like...(Although I realize that GG disagrees with me on this....!)

BUT...

I believe that much of the program with the exception of the few simulations (which were good) might as well have been in book form.

I also think that by using Screen Cam we could do a much better job....and we could get much better testimonials (I like the testimonial idea, btw)

There is a lack of depth in the program. Even though it is for novice users I still believe that more could have been covered in each section. I think the thing that is blatantly missing is the lack of showing specifically how each topic can be used to enhance learning and teaching. It seemed like it was a lot of work with little content.

Let me put it this way: If it were free then it is great! I don't think it is free however.

I like the leanness of the text and the set-up of most of the screens.

So there you have it.

Have a great weekend.

Mary

Appendix B

Vision for the Integration of Information Technologies within Nova Scotia Public School Programs: Software Matching

***Vision for the Integration of Information Technologies within
Nova Scotia Public School Programs: Software Matching***

By the end of grade 3

- ♦ Computer-based painting
 1. Orly's Draw a Story
- ♦ Drawing
 1. Orly's Draw a Story
- ♦ Simulation
 1. Sim Park
 2. Magic School Bus Series
 3. My Make Believe Castle
- ♦ Word-processing and publishing
 1. Kid Works 2 Deluxe
 2. Story Weaver Deluxe
 3. Easy Book
 4. Web Workshop
 5. Kid Pix 2
- ♦ Exploring curriculum ideas
 1. Blocks in Motion
 2. My First Incredible Amazing Dictionary
 3. DK Nature
 4. My Personal Tutor
 5. Millie's Math House
 6. Franklin Learns Math
 7. Franklin's Reading World
 8. Kid Phonics

By the end of grade 6

- ◆ Create and edit images to demonstrate understanding of concepts and ideas visually
 1. Graph Action Plus
- ◆ Planning software to brainstorm, outline ideas
 1. Inspiration
- ◆ Create databases and discover patterns and relationships between data
 1. Claris Works
- ◆ Work collaboratively and independently with multimedia presentation, web page creation
 1. HyperStudio
 2. Avid Cinema
 3. Asymetrix Multimedia ToolBook
 4. AOL Press
 5. Microsoft PowerPoint
 6. Adobe PageMaker
 7. Microsoft FrontPage 98
- ◆ Use scanners, video-editing, sound-editing
 1. Avid Cinema
 2. HyperStudio
 3. Adobe Premiere
 4. Asymetrix Multimedia ToolBook
- ◆ Explore numeric and geometric situations
 1. Building Perspectives
 2. The Lost Mind of Dr. Brain

By the end of grade 9

- ♦ Planning software to brainstorm, outline ideas
 1. Inspiration
- ♦ Create charts, tables, and graphs
 1. Claris Works
 2. Microsoft Excel
- ♦ Design, create and manipulate spreadsheets and databases
 1. Claris Works
 2. Microsoft Excel
- ♦ Use specialized software
 1. Writing for Readers
 2. Earth Explorer
 3. Hollywood High
- ♦ Use computer-based simulation software to explore curriculum
 1. Hot Dog Stand: The Works
 2. SimCity Classic
 3. Yukon Trail
- ♦ Create, modify and process information
 1. Microsoft Front Page 98
 2. Champ Interface
 3. Screen Cam
 4. Claris Works
 5. Writing for Readers
 6. DK Science
- ♦ Develop multimedia presentations
 1. HyperStudio
 2. Avid Cinema
 3. Asymetrix Multimedia ToolBook

4. Microsoft PowerPoint
5. Adobe PageMaker

◆ Explore more complex numeric and geometric situations

1. Building Perspectives
2. Mighty Math Cosmic Geometry

By the end of grade 12

◆ Create complex charts, tables, and graphs

1. Microsoft Excel
2. Claris Works

◆ Design, create, and manipulate spreadsheets and databases

1. Microsoft Excel
2. Claris Works

◆ Evaluate, select, and use specialized software

1. In My Own Voice
2. Speed Reader II
3. Screen Cam
4. Avid Cinema
5. HyperStudio
6. Shakespeare on CD-ROM (MacBeth, Romeo and Juliet)

◆ Computer-based simulations to explore and to represent curriculum ideas

1. Saunders Interactive Chemistry
2. Interactive Physics

◆ Planning software to brainstorm

1. Inspiration

◆ Create, revise, edit, and publish work

1. Orchestrating Multimedia
2. Microsoft FrontPage 98
3. Claris Works
4. Common Space
5. Adobe PageMaker
6. StudyWorks for Schools

Appendix C

Technology Roundtable Agenda with Apple Canada



Technology Roundtable Agenda

We are pleased to confirm your attendance at our Technology Roundtable' being held Thursday, February 19, 1998. Full day schedule is as follows:

9:30 a.m. - 12:00 Noon

Apple Presentation - New Products - New Technology
World Trade & Convention Centre
Highland Suite # 6
1800 Argyle Street
Halifax, Nova Scotia

12:15 - 1:00 p.m.

Lunch @ 'My Apartment' Restaurant
Argyle Street - Next to Canada Trust Building

1:10 p.m. - 3:30 p.m.

Apple Office
Canada Trust Building
Suite 320
1718 Argyle Street
Halifax, Nova Scotia
B3J 3N6

Apple Canada Inc.
Canada Trust Building, Suite 320
1718 Argyle Street
Halifax, Nova Scotia
B3J 3N6
Tel: (902) 425-1090
Fax: (902) 425-1090

Appendix D

Software Evaluation Form at Learning Resources and Technology, Nova Scotia
Department of Education and Culture

Video and Software Evaluation Form

See LRT Reports and Resources at: <http://lrt.ednet.ns.ca/>

TITLE: _____

Software (Format _____) Video (Series _____)
 Publisher _____

Evaluator Name: _____ Date: _____

School Address _____

Phone: _____ e-Mail _____

I am not an author or developer of a resource currently under consideration for acquisition by the Department of Education and Culture, nor am I contracted to produce a resource for submission for consideration by the Department:

Signature: _____

Recommendation: (Please circle your choice.)

Highly Recommended	Recommended	Recommended with Reservation	Not Recommended
---------------------------	--------------------	-------------------------------------	------------------------

Applicable Essential Graduation Learnings: Please circle those satisfied.

Aesthetic Expression	Communication	Problem Solving
Citizenship		

Personal Development	Technological Competence
----------------------	--------------------------

Curriculum Area _____ **Grade Level** _____

Appropriate Audience for resource (special needs, visual learner, etc.) _____

Applicable Key-Stage or Grade Level Outcomes:

Pedagogical Evaluation

Summarize the content of the program:

Describe how this resource complements and/or replaces any resources currently authorized or recommended for use within the program or course identified above.

Nova Scotia Department of Education and Culture, Learning Resources and Technology
3770 Kempt Road, Halifax, Nova Scotia B3K 4X8 Fax to:902-424-0633

STRENGTHS:

WEAKNESSES:

Is this the most **appropriate medium** for this learning experience? _____
Why?

How does the resource support or promote student **creativity, analysis, decision making and problem solving**?

List **support materials available** with the resource. _____

What, if any, **additional support materials** would be useful? _____

Identify any **bias** evident in this resource.

How is the resource **culturally inclusive**?

Comment on the **perspective/viewpoint** of the resource and its appropriateness for students at this grade level.

Describe how you would **use the resource** with learners:

Appendix E

School Education Plan for Banded Peak School

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Foreword

The challenge of change is forcing us to rethink our values and to rekindle the spirit of adventure. It will take courage, resourcefulness and endurance to meet this challenge – the courage to try, to commit and take more risks; the resourcefulness to be innovative and creative in finding new ways of doing old things; and the endurance to keep moving forward despite all the setbacks.

*John Amatt,
leader of Canada's first successful
expedition to climb Mount Everest*

The words of John Amatt speak directly to what is at the heart of the work we do at Banded Peak School. Courage, resourcefulness and endurance are three key attributes required to meet challenges head on and for teachers and students to achieve optimal success in teaching and learning.

As a collective group of educators, parents, and others interested in education, we work hard to support our students (and each other) face the challenges of living in a rapidly changing world. We take very seriously our obligation to prepare young people for the future. We believe success will arise from students acquiring not only the knowledge, skill and wisdom required for today, but also from their ability to maintain a commitment to learning that will enable them to acquire the knowledge, skills and wisdom required for tomorrow.

At Banded Peak School we work together to foster in each student a passionate commitment to learning and succeeding, in a society which is ever changing, fast-paced, information-based, and globally oriented.

Introduction

A context for our
School Education
Plan

"I am excited to be here... to see examples of innovative teaching and innovative learning that is going on and is promoted by Galileo Centre here at Banded Peak. I think that as business leaders and community leaders here you know that in order to remain competitive and prepared for the next millenium you have to have an edge. You have to be innovative. I think that also applies in the area of education. I'd have to say that having visited hundreds and hundreds of schools in the province and schools outside this province as well, this is one of the most innovative that I've ever seen. One of the most special schools perhaps in the entire world."

*Honourable Gary Mar Q.C.,
Minister of Education
Open House at Banded Peak
March 19, 1999.*

Courage, Resourcefulness, and Endurance: The Banded Peak Story

From the outset, teachers and students of Banded Peak School have been called upon to find innovative solutions to major challenges. The first challenge was to establish ourselves and begin building a unique culture while we were still housed in Elbow Valley School under difficult conditions. We faced physical limitations that could only be overcome by waiting. We knew that we also had a lot of work to do in meeting the demands that a commitment to an innovative school placed upon us.

Despite the shortage of resources and our collective lack of experience with the kinds of computer applications we knew we needed to learn, we made significant progress in establishing fundamental directions for our school even before we left Elbow Valley:

- Teaching and learning would be the focus of all our thinking. Technology would be one of many tools we would call upon as we looked for new ways of doing things.

- Teaming within grades was established, and two teams undertook to pilot the idea of keeping children together with the same teachers for more than one year.
- Innovative projects such as the Sight and Light, *Odysseus* and the AT & T collaborative web site were completed and housed on our newly developed school web site
- In-service and support were put in place for teachers to begin to acquire the skills they would need in order to meet the Alberta Education Technology Outcomes requirements established for students in Grade Six.
- The scope and purpose of the Galileo Center was more clearly defined, and plans for bringing in our first project teachers and the Galileo Fellow were realized.

Through the transition time to our new facility, we maintained a commitment to innovation and to building a unique identity for Banded Peak School. We had our school, and we knew what counted most: the children.

At the start of our first "real" year (1997-98) as a "real" school, we worked hard. Teachers and students began to explore project-based learning. We saw breathtaking results: A Grade Two class wrote, choreographed and performed *The Dream of Aengus*, inspired the year before by their work with *Rings of Power*. Another class of Grade Two's initiated, sustained and completed a collaborative, on-line project with children in Australia. Grade Six students who wrote letters of concern to the provincial government about land use issues in the Kananaskis had their letters read into Hansard, the official record of the Alberta legislature. Throughout the school, students created projects and displays. They wrote wonderful stories. They painted, sculpted, danced, debated: all the kinds of things that mark vibrant, engaged learning.

One of the commitments of Banded Peak School was to explore the ways in which emerging technologies create new opportunities for student learning. We were keenly aware that technology both enables and requires fundamental changes in teaching and learning, and in our first full year, we set about the task of establishing what those changes might be.

During 1997-98, we established a robust computer network that allowed staff and students to work interactively throughout the school, and on-line. Students had and continue to have easy, relevant and regular access to the computers. Individually, in small groups and as entire classes, they accessed computers as they need them for their work. Throughout the school, students learned the basics of file management on a network, and the STARS mentoring program trained a corps of student experts who were able to troubleshoot in this vital area. At every grade, students routinely used Microsoft Word as they wrote stories and reports. Many used presentation software such as Power Point. Students at all grades explored multimedia software such as Multimedia Workshop and Hyperstudio, incorporating graphs, sound, film clips, graphics and hyperlinks into their research projects. Older children routinely scripted

web pages. They searched the Internet for up-to-the minute information. Children used spreadsheets and created graphs as they managed data. Our Smartboard, scanner and digital cameras were constant use.

For the staff, there was much to celebrate in all these accomplishments, but there were also struggles, set-backs and difficulties. Some days it felt as if there were *only* problems. And some days it still feels that way. Committed to a dream, we were keenly aware of all the ways and places we felt we had fallen short of our ideals. Striving always for the very best, committed wholly to the young people in our charge, we were never content just to "settle for", just to "get by", even just to celebrate. We pushed ourselves hard on the children's behalf. Accomplishing one part of any task, we immediately set about doing more.

1998-99 brought numerous changes including the recognition that the work that was so treasured by and central to those at Banded Peak School was something to be celebrated. Although we realized that our dream had not fully blossomed, it was exciting to see some of the fruits of the work being acknowledged. We knew there was still much work to done and would constantly strive to attain our vision.

Complementary courses were developed and implemented. The students throughout the school became more engaged in project learning and celebrated their learning through exhibitions. With the development of the Alberta Education's Information and Communication Technology Interim Program of Studies, we saw ourselves well positioned at Banded Peak to be able to meet the student outcomes. This in light of the work that had been done in the previous year to establish and now to maintain a robust computer network that allowed staff and students to work interactively throughout the school and on-line

During the spring of 1999, with the announcement that both administrators would be, taking sabbatical leaves for the upcoming year both the School Council and the staff entered into a process seeking input into the new administrative team. What resulted was in fact more powerful. It became an opportunity to "re-examine and re-affirm the beliefs that define who we are and what we stand for". It also became clear that both the School Council and the staff shared a vision about what was important. A commitment to student learning, innovative teaching practices and courageous leadership was identified as critical, in addition to the need for consistency, the democratic process and effective communication. In the School Council letter to Colleen Brownlee, Rocky View School Division's Superintendent they identify the need to have the following in the administrative team for next year.

"In relation to student learning and programs, they value and believe in "the school's mission - "to inspire a passionate commitment to learning", the investigations with regards to "technology, project-based learning, collaboration and student autonomy" and the emphasis on "the development of each child's strengths to ensure that each student feels valued, encouraged and excited about

coming to school". They acknowledge support for the "enhancement of all aspects of school life including art, music and physical education", as well as "the development and continuation of programs initiated by the community".

The staff letter to Colleen Brownlee eloquently outlines what is at the heart of the work and the nature of the passion

"As we look ahead to the challenges that face us in the coming school year, the staff at Banded Peak School felt it necessary to re-examine and reaffirm the beliefs that define who we are and what we stand for. In the three years we have been together as a staff, we have worked hard to develop a common vision while at the same time respecting and accommodating the inevitable differences that mark any group's journey together. The process of clearly establishing our needs, our hopes and our aspirations as we move into a transition year has been another important milestone on that journey. At Banded Peak School, our mission statement and vision go far beyond words on a page, once written and soon forgotten. They live in our daily work with children and with one another. They also live in our promise to one another that key decisions and turning points in the life of our school be framed by our shared values.

Our vision is premised on a number of shared beliefs and principles around which there is tremendous consensus. These fundamental tenets have shaped who we are as a school and determined what we believe in as a staff. They have become the cornerstones of our school, and our continued success depends on the promotion and strengthening of these principles. Therefore, we are committed to work with you in order to maintain the vision that has been forged at Banded Peak School.

The appointment of a new administrative team is a turning point in the life of any organization. We recognize how important our insights are in helping to inform your decision-making as you select a new administrative team for our school. Working through this process of examining and reaffirming our beliefs about teaching and learning has helped unite us as a staff and has strengthened our resolve around the fundamental principles that define Banded Peak School. We believe it is important for our new administrative team to be acquainted with and be prepared to uphold these principles, identified as priorities by our whole staff. They are fundamental to the life of Banded Peak and the community that it serves.

The commitments we hold in common mark the fundamental area of importance defined by our staff. We affirm our commitment to ensuring that staff members are appreciated, valued and understood. and we remain united in our resolve to defend our shared vision. As a staff, we further reaffirm our determination to protect, strengthen and build on the work of Galileo and Banded Peak as a whole.

As you work through the selection process, it will be important for you to consider the needs and expectations of our staff in terms of leadership. We require an administrative team who has the courage to stand up for and defend our philosophy and innovative practices. Furthermore, we seek complete honesty and openness from the new administrative team. In addition, we require leadership that shares the same vision and philosophy as the current administration of Banded Peak: a desire to move forward, to be open-minded and innovative. Our staff was very clear in insisting that the new leaders of our school would be supportive of creative thinking and "on the edge" work.

The leadership qualities that we will continue to value and wish to develop within our staff include the encouragement of innovative and creative work. Other qualities that are highly regarded include an open-mind, honesty, integrity and the ability to make decisions and problem-solve in a collaborative and effective manner

In times of change and transition, new possibilities arise and our staff truly values this potential. We affirm our commitment to working collaboratively with the new administrative team. However, we also recognize the importance of preserving the gains we have made in the past three years. We wish to maintain the precedents, which have been established at Banded Peak. We expect that staff will continue to have genuine input into decisions and directions so that the strength of the people can be a real force in our building. Furthermore, we expect that the mindset, philosophy, procedures, and principles of this school will remain and be upheld. It is clear that this staff expects to maintain their passion and to push the edges of current realities in education. As Galileo progresses next year, we have resolved to build on the foundations of shared understandings, innovations, and initiatives that we laid together.

As a staff we recognize the role that effective communication must play in the continued success of our school. We affirm the importance of open and honest communication with each other and expect the same from our new

administrative team. We expect to speak our minds, offer our disagreements, reservations, and ideas openly within a supportive environment.

As a staff, we reaffirm our commitment to educational innovation. We expect continued support for teachers who take risks and offer new possibilities. The staff of Banded Peak wish to see our vision of innovative teaching and learning practices grow and expand. We need the opportunity to advance practices rather than expending energy defending ourselves, explaining ourselves, and trying simply to keep things afloat while Brant and Terry are on leave."

We are proud of what we have accomplished. We are proud of the work of our students, staff and community members. We celebrate our success. In the upcoming years, we look forward to doing some things better, to starting new projects, to looking for the next steps in building the culture of Banded Peak. It is important to set the context of those plans within a clear understanding of how far we have truly come in so short a time.

1998-2001 School Profile

OUR MISSION

To inspire a passionate commitment to learning.

OUR VISION

Banded Peak School is courageously committed to the passionate engagement of the mind, body and spirit through challenging the status quo, advancing educational knowledge and practice, cultivating and celebrating of uniqueness, developing vibrant partnerships, fostering environmental literacy and responsibility and optimizing all resources to enhance and extend teaching and learning

THE GALILEO CENTRE

The staff and stakeholders involved with Banded Peak School have worked hard to establish it as an educational facility focused on meeting the challenges of the twenty-first century. Banded Peak School is proud to be home to the "Galileo Centre". This Rocky View School Division initiative has resulted in the establishment of a province-wide centre for teacher development and educational innovation at the school.

The purpose of the Galileo Centre is to enhance student learning through pursuing:

- the creation of new images of teaching and learning
- teaching excellence through supporting professional development
- effective use of technology in day-to-day teaching and learning
- conducting and applying classroom-based action research

The Galileo Centre operates in partnership with Alberta Education, the Alberta Teachers' Association, the University of Calgary, the Gallagher Educational Foundation and a variety of educational and corporate partners.

With the completion of an external evaluation requested by the superintendent of Rocky View School Division in January 1999, it was reported that the Galileo

**1998-2001 SCHOOL EDUCATION PLAN
BANDED PEAK SCHOOL**

Centre is meeting and in some instances exceeding its mandate to improve student learning.

GENERAL SCHOOL INFORMATION

Banded Peak School is located in the Alberta foothills 1.5 kilometres south of the Hamlet of Bragg Creek. The school is a part of the Rocky View School Division. The building is beautifully situated on 40 acres of mostly forested land. While the building includes state-of-the-art design features and technological infrastructure, the natural splendor of the outdoors is highlighted in the school through the use of peeled log columns, open beam ceilings, and large windows which look out to the lodgepole pine, spruce and aspen forest. The natural surroundings also provide an unparalleled resource for science, environmental studies, outdoor pursuits and other educational purposes.

The school attendance boundaries encompass residents living within the Rocky View School Division in Redwood Meadows and most of the Bragg Creek area.

The school is designed to serve students in grades K-8 with 1999-2000 being the first year to achieve its mandate.

ENROLMENT

GRADE	Projected Enrolments				
	1995-97	1997-98	1998-99	1999-00	2000-01
K	N/A	46	21	25	22
1	58	62	56	50	54
2	54	62	62	60	54
3	53	55	55	66	60
4	46	57	58	58	69
5	57	47	57	59	64
6	N/A	60	50	52	65
7	N/A	N/A	62	47	62
8	N/A	N/A	N/A	56	53
TOTAL	268	384	421	473	503

STAFFING FOR 1999-2000 (expressed as full time equivalent positions)

Professional Staff (funded by school)	23.39
Support Staff	7.1
Special Needs Assistants	2.0
TOTAL	32.49

School Goals

Our school goals have been established through a process that has involved the input and involvement of many teachers and parents. The goals are developed so our energy and focus will be directed to areas that we have identified as needing growth. Mathematics, integration of technology, assessment and reporting student progress, provides the cornerstones upon which much building will continue to take place.

Goal

Alberta Education Goal #1:

Education is focused on what students need to learn and students achieve high standards.

Supporting Rocky View Goal #1 (1998-2001):

Education is focused on what students need to learn and students achieve high standards.

A Focus on Learning Mathematics

Supporting School Goal #1 (1999-2002):

To continue to further explore the development of the essentials of a well developed mathematics program.

Results

What will this look like when we get to where we want to be?

- Students perform at or above an acceptable standard on provincial examinations in mathematics.
- Teachers and parents are informed on mathematics curriculum issues.
- Items in Alberta Education's Information and Communication Technology Interim Program of Studies that pertain to mathematics are identified and addressed.
- Mathematical learning involves appropriate, challenging, and engaging uses of technology.
- Appropriate and effective professional development opportunities exist in the area of mathematics.
- Baseline and year-end measures of student knowledge and skills are a means of gauging success.

**Performance
Measures**

What evidence will describe our progress?

- Percentage of students who achieve at or above an acceptable standard on Provincial Achievement Examinations in mathematics.
- Percentage of students who achieve at or above acceptable standard in mathematics as determined by measures included in the Classroom Assessment Materials Package (CAMP).
- Difference in student results obtained in 1999 and 2000 on Provincial Achievement Tests and CAMP assessments in mathematics.
- Number of participants who register in an interactive, on-line mathematics project developed by students and/or teachers of the school.
- Number of web pages and/or databases pertaining to mathematics that have been developed by students and/or teachers that are available on the school's internet and intranet sites.

Strategies

What action will help us achieve the desired results?

- Analyzing Provincial Achievement and CAMP assessment results from this year and next year.
- Registering one or more mathematics initiatives in the school as a *SchoolNet On-line Grassroots Project*.
- Designating 1/3 of school-initiated Professional Development time to mathematics
- Focusing on teacher fluency relative to computer applications identified as effective for use in teaching and learning mathematics.
- Developing an ongoing collection of work for sharing amongst teachers.
- Identifying technology outcomes that pertain to mathematics at every grade level.

Goal

Bringing together
students, teachers,
and the community

Alberta Education Goal #2:

Education in Alberta is responsive to students, parents, and communities.

Supporting Rocky View Goal #2 (1998-2001):

Parents and the community have the opportunity to be involved in the governance and delivery of a restructured education system.

Supporting School Goal #2 (1999-2000):

To continue to investigate exhibitions as a component of the reporting process.

Results

What will this look like when we get to where we want to be?

- Common understanding and support by staff, parents and the community of the concept exhibitions as examples of student progress.
- Staff consensus on what constitutes Student Exhibitions.
- Positive attitude of parents, students and the community towards the use of exhibitions as part of the reporting process.

Performance Measures

What evidence will describe our progress?

- Number and range of exhibitions of student work.
- Percentage of parents that understand and support exhibitions as part of a means of reporting student progress.
- Percentage of staff that understand and support exhibitions as part of a means of reporting student progress.

Strategies

What action will help us achieve the desired results?

- Identify a range of opportunities for student involvement in exhibitions.
- Document teacher and student learning that takes place through the work associated with exhibitions.

Goal

Alberta Education Goal #5:

Information technology is integrated into education to enhance student learning, and increase efficiency and flexibility of delivery.

Supporting Rocky View Goal #5 (1998-2001):

Information technology is integrated into education to enhance student learning, and increase efficiency and flexibility of delivery.

Supporting School Goal #3 (1999-2002):

To improve student learning and increase teacher effectiveness through the integration of technology into teaching and learning as it relates to Alberta Education's Information and Communication Technology Intern Program of Studies.

What will this look like when we get to where we want to be?

Students have opportunities to use technology to complete meaningful work, particularly in the area of mathematics

Items in Alberta Education's Information and Communication Technology Intern Program of Studies that pertain to mathematics will be identified and addressed.

Students have increased access to rich, challenging learning opportunities and complete work on-line.

Students complete investigations work using technology.

Students and teachers use a variety of media technologies.

To have teachers' competence with technology reflect the outcomes identified to the Division 3 level in the Alberta Education Information and

Communication Technology Intern Program of Studies.

School wide science/mathematics project focussing on specifics of grade level curriculum relating to the environment.

Performance Measures

What evidence will describe our progress?

The number of student projects with a focus on the environment.

The number of staff taking advantage of technology-related professional development opportunities including sharing sessions, in-service sessions, inter-class/school visits etc.

The annual expenditure (expressed as dollars per student) on information and communication technology.

- The number of student projects (as reported by teachers in which technology is used to:
 - Communicate and/or collaborate with students inside or outside the school.
 - Access work with and communicate information.
- The average number of times a student accessed the school network per year and the average length of session per log-in.
- The percentage of time that the network is "down".
- The number of teacher created and student created web pages on the school's Internet and Intranet web sites.
- The ratio of students to computers.

Strategies

What action will help us achieve the desired results?

- Establish a means to provide ongoing technology related professional growth activities.
- Establish on-site, regular technical and training for teachers.
- Expand the school's Internet and Intranet web sites.
- Establish a committee to review hardware and software requirements to support teaching and learning activities and identify priorities and recommendation for expenditures.
- Work in conjunction with the Galileo Centre to provide access to a notebook type computer when necessary.
- Establish a maintenance strategy to minimize technology 'down' times and log technical problems and concerns.
- Establish technologies that allow access to tasks, data and learning opportunities that stimulate thought and inquiry.
- Establish technologies that offer access to simulations, goal-based learning and real-world problems.

- Establish technologies in which users can provide input/resources to the technology/system on demand.
- Work with the Alberta Education Information and Communication Technology Interim Program of Studies to ensure teachers' competence with technology reflects the outcomes identified to the Division 3 level.



Goal

Communicating student progress

Alberta Education Goal #7:

The education system is open and accountable for the achievement of results and use of resources.

Supporting Rocky View Goal #7 (1998-2001):

Ensure the education system is open and accountable for achievement of results and use of resources.

Supporting School Goal #4 (1999-2002):

Communication of student achievement and academic progress will continue to be enhanced.

Results

What will this look like when we get to where we want to be?

- Highly effective system of reporting student achievement and academic progress is developed and implemented.
- Processes of assessing, evaluating and reporting student achievements and progress are continuous and interactive.
- Each class hosts at least one exhibition of student work for the community during the academic year.
- Students play an integral role in communicating their academic progress and performance through:
 - taking an active and meaningful role in scheduled parent-teacher conferences.
 - displaying, defending, or answering questions about their work in exhibitions of their work.
 - establishing a portfolio of their work.

Performance Measures

What evidence will describe our progress?

- Percentage of parents who support the current reporting process.
- Identification of strengths by parents of the current reporting process.
- Percentage of parents who believe they are adequately informed about the reporting process.
- Percentage of parents who support the reporting intervals developed as part of this strategy

Strategies

- Percentage of parents who attend student-teacher-parent conferences.
- Total number of public exhibitions of student work.
- Percentage of parents who attend student exhibitions of their learning.
- Qualitative feedback received from students, teachers, parents and other community members regarding student exhibitions and/or other measures taken to account for student progress and performance.
- Effectiveness of portfolios during the reporting process.
- Percentage of parents that understand and support exhibitions as part of a means of reporting student progress.
- What action will help us achieve the desired results?**
 - The Classroom Assessment Package (CAP) in mathematics will be completed in all grades (except grades 3 and 6) by June 15.
 - Thorough statistical analysis performed using the raw data arising from the administration of the CAP materials.
 - Survey staff, students, and parents to determine satisfaction regarding process reporting process.
 - Investigate purpose and priorities of student portfolios.
 - Parent information evening to present Provincial Testing Results and analysis of the same.
 - Professional Development activities focused on student assessment, portfolios and exhibitions.

Student Achievement Results

Grade 3 Provincial Achievement Exams

STUDENT ACHIEVEMENT RESULTS (percentages)						
PROVINCIAL RESULTS GRADE 3:	1996-1997	1997-1998	1998-1999		1999-2000	
	Achieved	Achieved	Goal	Achieved	Goal	Achieved
Enrolment: 43 (1997/98) Enrolment: 60 (1998/99)						
LANGUAGE ARTS Acceptable Standard Standard of Excellence	75.4% 9.8%	96.4% 21.4%	85% 15%	94.9% 30.5%	85% 13%	
MATHEMATICS Acceptable Standard Standard of Excellence	82.7% 5.8%	89.3% 30.4%	85% 15%	88.2% 30.0%	85% 13%	

Achievement Test Analysis * To be completed October 1999.

Areas of strength (1998-99)

Suggested areas for improvement (1999-2000)

Plans for improvement (1999-2000)

OTHER RELEVANT DATA AND ACHIEVEMENTS:

BANDED PEAK SCHOOL

"Inspiring a Passionate Commitment to Learning"

School Education Plan 1998 - 2001

BANDED PEAK SCHOOL

School Education Plan

Principal: Dave Morris, B.Ed., M.Ed.

Date: September 30, 1999

Amendment Date:

© Banded Peak School
Rocky View School Division
Post Bag 4 • Bragg Creek Alberta
Phone (403)949-2292 • Fax (403)949-4067
Internet: www.rockyview.ab.ca/bpeak

Grade 6 Provincial Achievement Results

STUDENT ACHIEVEMENT RESULTS (percentages)						
PROVINCIAL RESULTS GRADE 6: Enrolment: 50 (1997-98) Enrolment: 50 (1998-99)	1996-1997	1997-1998	1998-1999		1999-2000	
	Achieved	Achieved	Goal	Achieved	Goal	Achieved
LANGUAGE ARTS Acceptable Standard Standard of Excellence	NA	91.5% 27.1%	85% 15%	95.9% 28.6%		
MATHEMATICS Acceptable Standard Standard of Excellence	NA	88.1% 20.3%	85% 15%	95.9% 16.3%		
SCIENCE Acceptable Standard Standard of Excellence	NA	87.9% 15.5%	85% 15%			
SOCIAL STUDIES Acceptable Standard Standard of Excellence	NA	81.4% 13.6%	85% 15%			

Achievement Test Analysis ^{*}To be completed October 1999.

Areas of strength (1998-99)

Suggested areas for improvement (1999-2000)

Plans for improvement (1999-2000)

OTHER RELEVANT DATA AND ACHIEVEMENTS:

School Organization

Program/Delivery Priorities and Changes

The following points highlight the program priorities not identified through the 1999/2000 school goals. Changes made are also mentioned.

- The Learning Support Team (Resource Team) will expand to accommodate the addition of grade eight to the school. Our efforts will continue to focus on providing the best possible support to students with special learning needs. This will involve deploying a significant portion of funds allocated to the Learning Support program being allocated to Resource Assistants. These assistants play an integral role in the day-to-day work of assisting students with unique learning needs. They work in collaboration with classroom teachers under the supervision of Diane Axelson, the Learning Support Team Leader. While the Resource Assistants are responsible for delivering aspects of the individualized programs developed for identified students, the program planning, assessment, and monitoring remain the role of the teaching staff.

The Learning Support Team has requested that a portion of the funding allocation (\$1250) be allotted to substitute teacher time. This is to be used to provide time to collaboratively develop I.P.s. and related inclusive education team meetings involving both Learning Support Assistants and Classroom Teachers.

The Early Literacy Initiative supported as a three year project will be moving into its second year in September. We will be continuing to strive to most effectively develop and implement this initiative.

The Parent Support Group requests that both the school and the School Council continue to support their initiative (\$250.00 each) for the upcoming year especially in light of their involvement in the 1999 Learning Disabilities Conference in November in Calgary.

- Complementary Courses continue to be developed especially with the inclusion of grade eight students. Due to the limited number of grade seven students (~50) and grade eight students (~60), a wide range of course offerings is a challenge. To address this issue, we are working to develop a range of complementary that are relevant and of interest to students. The program will operate as it did this year on

a thirteen-week trimester. The program will consist of a blend of Career and Technology Studies (CTS), French, and Fine Arts (Art, Drama, and Music). In the area of CTS, we will continue to emphasize the strands associated with the Information Processing, Communication Technology, Robotics, Wildlife Studies and Forestry. A strong Fine Arts presence will also be a part of the complementary courses. Program choices are limited and hence a request for an additional .18 teacher for each of grade 7 and 8 will be made to the Human Resources department to be funded through the Human Resources contingency funds.

- Heavy demands have been placed on the infrastructure within the school to meet the learning and teaching needs especially those associated with Alberta Education's Information and Communication Technology Interim Program of Studies. We will further develop on-line learning opportunities for our students through the school's Internet and Intranet sites. We will augment the limited technical support that is provided through the school division by contracting this expertise. We will be continuing to build upon STELLAR, our student mentoring program with IKON Business Solutions Inc.
- Banded Peak School will continue to work collaboratively with the teacher preparation program at the University of Calgary in ways that add value to the goals and priorities of the schools.
- Working collaboratively with the School Council, we hope to continue to develop our fledgling Band that was introduced as an extra-curricular activity during the 1998/1999 school year. The program will be operated by a sub-committee of the school council, and will be self-funded at an anticipated cost \$100/student. The School Council will be responsible for managing funds, contracting a director and arranging clinicians as required. Preliminary investigations regarding the feasibility of the band program becoming curricular based will take place during the 1999-2000 school year.
- Divisional funds for bus and lunch supervision will be used in the following manner. Bus supervision will be added to the school assistant time, increasing the school assistant time by approximately 15 minutes at the beginning and end of each day (total of \$702). Pending a final decision by the School Council with regard to the direction of the School Council run lunch program, school funds (\$1474) for Lunch Supervision will be allocated to the School Council who will use this money solely for the purpose of supplementing their funds used to provide honoraria to lunch supervisors. A request for a cheque for \$1474 from Rocky View School Division made payable to the Banded Peak School Council will be made to initiate this transfer of funds.
- Until the anticipated completion of the Bragg Creek Community Hall in 2000, Banded Peak will continue to host numerous community use programs.

School Calendar

Banded Peak 1999-2000 Calendar

AUG	Mon	Tues	Wed	Thurs	Fri
	23	23	25	26	27
	30	31			

OCT	Mon	Tues	Wed	Thurs	Fri
	4	5	6	7	8
	11	12	13	14	15
	18	19	20	21	22
	25	26	27	28	29

DEC	Mon	Tues	Wed	Thurs	Fri
			1	2	3
	6	7	8	9	10
	13	14	15	16	17
	20	21	22	23	24
	27	28	29	30	31

FEB	Mon	Tues	Wed	Thurs	Fri
		1	2	3	4
	7	8	9	10	11
	14	15	16	17	18
	21	22	23	24	25
	28	29			

APR	Mon	Tues	Wed	Thurs	Fri
	3	4	5	6	7
	10	11	12	13	14
	17	18	19	20	21
	24	25	26	27	28

JUN	Mon	Tues	Wed	Thurs	Fri
				1	2
	5	6	7	8	9
	12	13	14	15	16
	19	20	21	22	23
	26	27	28	29	30

SEP	Mon	Tues	Wed	Thurs	Fri
			1	2	3
	6	7	8	9	10
	13	14	15	16	17
	20	21	22	23	24
	27	28	29	30	

NOV	Mon	Tues	Wed	Thurs	Fri
	1	2	3	4	5
	8	9	10	11	12
	15	16	17	18	19
	22	23	24	25	26
	29	30			

JAN	Mon	Tues	Wed	Thurs	Fri
	3	4	5	6	7
	10	11	12	13	14
	17	18	19	20	21
	24	25	26	27	28

MAR	Mon	Tues	Wed	Thurs	Fri
			1	2	3
	6	7	8	9	10
	13	14	15	16	17
	20	21	22	23	24
	27	28	29	30	31

MAY	Mon	Tues	Wed	Thurs	Fri
	1	2	3	4	5
	8	9	10	11	12
	15	16	17	18	19
	22	23	24	25	26
	29	30	31		

Instructional	
Schools Close At Noon	
Organizational/VPD	
Central Based PD	
Holiday	
Convention/Interviews	

School Calendar

Standard School 2000 - 2001 Calendar

AUG

Mon	Tues	Wed	Thurs	Fri
21	22	23	24	25
28	29	30	31	

OCT

Mon	Tues	Wed	Thurs	Fri
2	3	4	5	6
9	10	11	12	13
16	17	18	19	20
23	24	25	26	27
30	31			

DEC

Mon	Tues	Wed	Thurs	Fri
				1
4	5	6	7	8
11	12	13	14	15
18	19	20	21	22
25	26	27	28	29

FEB

Mon	Tues	Wed	Thurs	Fri
			1	2
5	6	7	8	9
12	13	14	15	16
19	20	21	22	23
26	27	28		

APR

Mon	Tues	Wed	Thurs	Fri
2	3	4	5	6
9	10	11	12	13
16	17	18	19	20
23	24	25	26	27
30				

JUN

Mon	Tues	Wed	Thurs	Fri
				1
4	5	6	7	8
11	12	13	14	15
18	19	20	21	22
25	26	27	28	29

SEP

Mon	Tues	Wed	Thurs	Fri
				1
4	5	6	7	8
11	12	13	14	15
18	19	20	21	22
25	26	27	28	29

NOV

Mon	Tues	Wed	Thurs	Fri
		1	2	3
6	7	8	9	10
13	14	15	16	17
20	21	22	23	24
27	28	29	30	

JAN

Mon	Tues	Wed	Thurs	Fri
1	2	3	4	5
8	9	10	11	12
15	16	17	18	19
22	23	24	25	26
29	30			

MAR

Mon	Tues	Wed	Thurs	Fri
			1	2
5	6	7	8	9
12	13	14	15	16
19	20	21	22	23
26	27	28	29	30

MAY

Mon	Tues	Wed	Thurs	Fri
	1	2	3	4
7	8	9	10	11
14	15	16	17	18
21	22	23	24	25
28	29	30	31	

Instructional	
Schools Close At Noon	
Organizational/Inservice	
Central Based Inservice	
Holiday	
Convention/Interviews	

Organizational and P.D. Days Banded Peak 1999-2000

Semester One	Instructional	Organizational/ Professional/PTI	Explanations
August	0	2	Aug. 30 Organizational Aug. 31 Professional Development
September	20	1	Sept. 27 Professional Development
October	19	1	October 22 Central Based P.D.
November	20	1	Nov. 12 Professional Development *Nov. 29 Collaborative Conferences
December	14	1	Dec. 3 Professional Development
January	17	1	Jan 31 Day in Lieu for conferences
February	18	2	Feb. 24 and 25 Teachers' Convention
March	23	0	
April	13	1	April 14 Day in Lieu for conferences
May	21	1	May 19 Professional Development
June	20	2	June 29 and 30 Organizational
YEAR	185	13	Grand Total: 198

* Request made to Superintendent for Nov. 29, for Collaborative Student Conferences.

Date Approved:

ORGANIZATIONAL & PROFESSIONAL DEVELOPMENT DAYS Banded Peak 1999-2000	
Organizational Dates	Topic/Activity
1. August 30, 1999 2. June 29, 1999 3. June 30, 1999	<ul style="list-style-type: none">▪ Review of school mission, vision, goals, for 1999-2000.▪ Planning, preparation, and scheduling for 1999-2000.▪ Review of school year, preparations for 2000-2001.▪ Review of school year, preparations for 2000-2001.
School-Based P.D. Dates	Topic/Activity
1. August 31, 1999 2. September 27, 1999 3. November 12, 1999 4. May 19, 2000	

Finalized with October amendments.

Date Approved: March 11, 1999.

Organizational and P.D. Days 2000-2001

Semester One	Instructional	Organizational/ Professional/PTI	Explanations
August	1	3	Organizational/Professional
September	19	1	Professional
October	20	1	Central Based Inservice
November	20	2	Professional/PTI(in lieu)
December	16	0	
January	17	1	Organizational/Professional/PTI
February	17	2	Teachers' Convention
March	21	1	Professional
April	14	1	PTI (in lieu)
May	21	1	Professional
June	19	2	Organizational
YEAR	185	15	Grand Total: 200

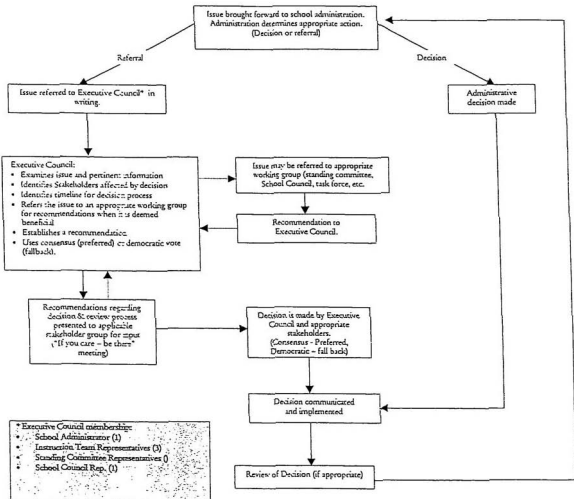
Date Approved: March 11, 1999.

ORGANIZATIONAL & PROFESSIONAL DEVELOPMENT DAYS 2000-2001	
Organizational Dates	Topic/Activity
1. August 28, 2000	<ul style="list-style-type: none"> ▪ Review of school mission, vision, goals, for 2000-2001. ▪ Planning, preparation, and scheduling for 2000-2001 • ▪ Review of school year, preparations for 2001-2002. ▪ Review of school year, preparations for 2001-2002.
2. August 29, 2000	
3. August 30, 2000	
4. June 28, 2001	
4. June 29, 2001	
School-Based P.D. Dates	Topic/Activity
1. August 28, 2000	
2. September 25, 2000	
3. November 24, 2000	
4. March 19, 2001	
5. May 7, 2001	

Finalized with October amendments.

School-based Decision Making Process

The School-based decision making process at Banded Peak School is an evolving one. The graphic below illustrates the decision making process that is now being implemented. Issues or concerns are welcomed at any time from students, parents or staff.



Section

School Budget

Budget Presentation Summary

1999 - 2000

SCHOOL EXPENDITURES		
		1999-2000
School Enrolment:		473
Certificated Staff:		\$1,370,524
Administrators, Teachers, Counsellors, Allowances		
Substitutes:		\$4500
Support Staff:		\$202,079
Secretaries, Business Managers, School Assistants, Child Development Assistants, Library Technicians, Library Clerks		
School-based Services:		
Postage/Telephone		\$7975
Staff Development		\$1924
Administrator, Teacher, Support Staff e.g. Visitations, mentoring, peer coaching Implementation in-service		
General Supplies		\$62,950
Equipment		\$0
Textbooks		\$3,500
Library Materials & Supplies		\$8950
Copier		\$9500
Extra-curricular		\$0
Other		\$2000
Reserves		\$0
Contingency		\$40,175
Estimated Total Expenditure:		\$1,714,077
SCHOOL REVENUE		
School Allocation Estimate		\$1,607,417
Fees Estimate		\$40,352
Other		\$26,133
Carryover Contingency Estimate		\$40,175
Estimated Total Revenue:		1,714,077

Approval Form

SCHOOL EDUCATION PLAN APPROVAL FORM
1998-2001 PROPOSED SCHOOL EDUCATION PLAN
(1999-2000 Edition)

Have you consulted with:

School Staff

Yes

☒

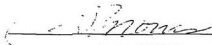
No

☐

School Council

☒☐

I, D. McRae (Principal) certify that the proposed School Education Plan was developed according to the parameters, guidelines and expectations outlined in Rocky View School Division's School-Based Decision-Making Manual.



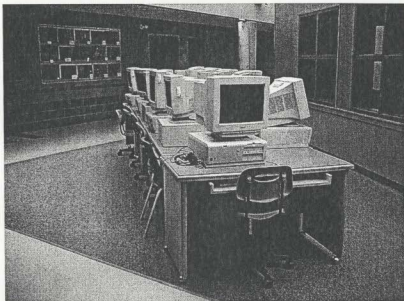
Signature (Principal)

I, _____ (Superintendent of Schools) certify that the proposed School Education Plan based on a review of the plan and the above certification on _____ (date).

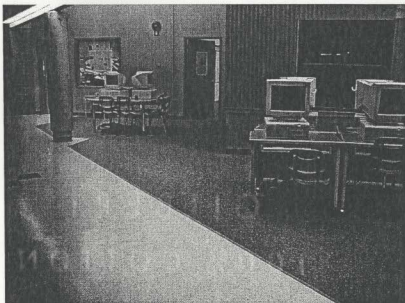
Superintendent of Schools

Appendix F

Computer location at Banded Peak School



Computers are located in pods in the hallways as well as in classrooms.

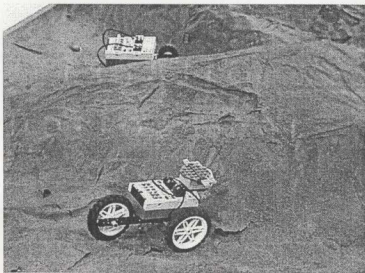


Appendix G

Images of Grade 2C at Banded Peak School



Grade 2C classroom with Martian surface. Olympus Mons, students' robots, and night sky are shown. SMARTBoard technology and pod of computers are in background.



Robots designed by Grade 2 Students at Banded Peak School on the student-created Martian terrain.



This particular robot was designed by the team whose purpose was to collect Martian soil to compare it to Earth's soil.

